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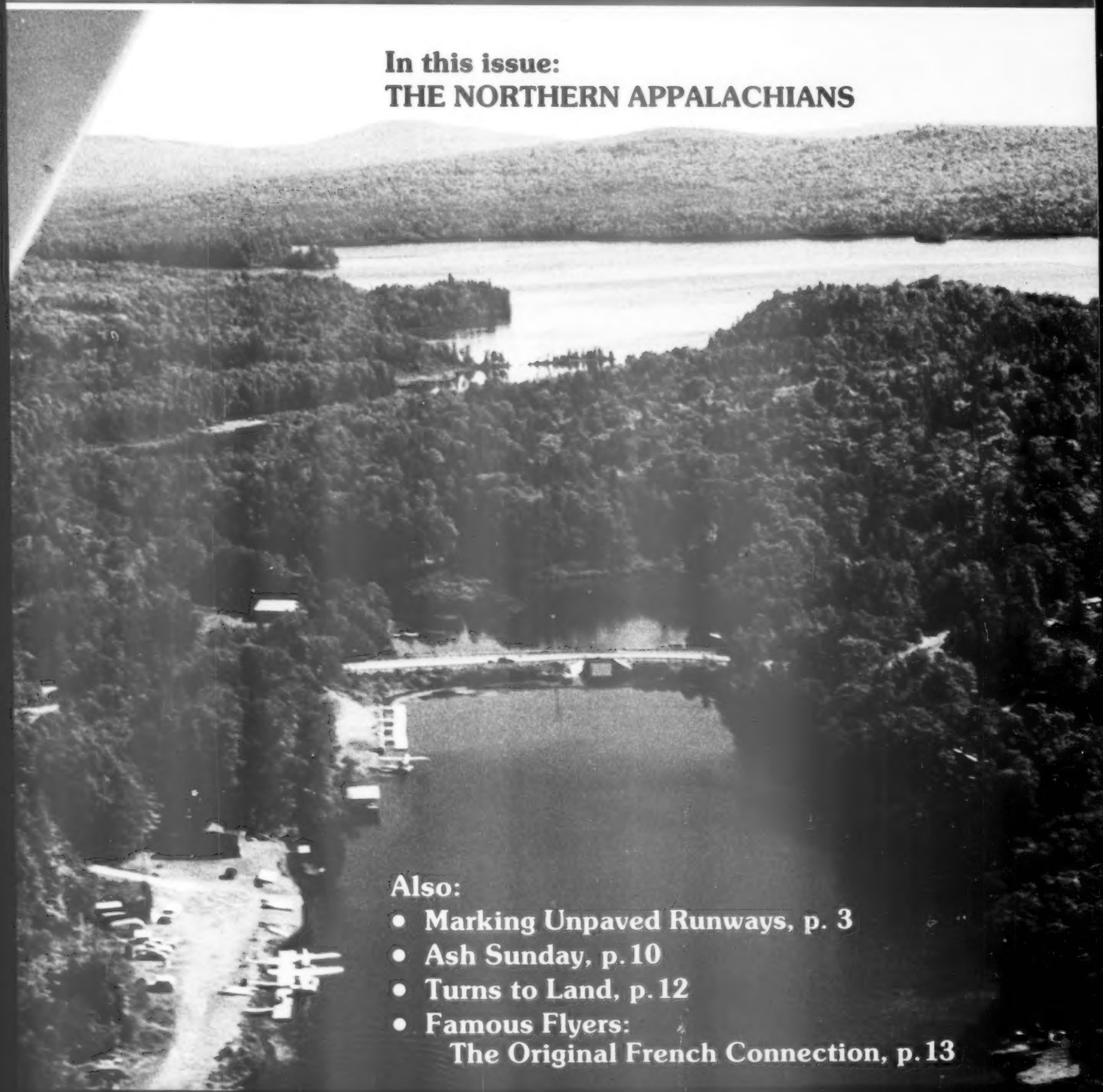

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FAA GENERAL AVIATION NEWS

DEPARTMENT OF TRANSPORTATION/ FEDERAL AVIATION ADMINISTRATION

SEPTEMBER-OCTOBER 1980
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Neil Goldschmidt, *Secretary of Transportation*

Langhorne Bond, *Administrator, FAA*

Walter Luffsey, *Assoc. Admin., Aviation Standards*

Kenneth S. Hunt, *Director, Flight Operations*

Bernard A. Geier, *Chief, General Aviation and Commerical Division*

David Gelfan, *Editor*

P.A. Duncan, *Assoc. Editor*, Louise Oertly, *Ass't. Editor*

Michael Friend, *Research Ass't.*

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BRIEFS

HANDLES WITH CARE. After examining inadvertent gear retraction accidents between 1975 and 1978, the National Transportation Safety Board has concluded that, typically, these accidents occur when the pilot reaches for the *flap* UP switch and activates the *gear* UP switch instead. In some light general aviation aircraft manufactured by Beech, the two can be easily confused because of cockpit design, especially when the pilot's attention is distracted. The Board recommended that Beech modify the switches to prevent confusion. Until such time, take care when handling handles.

NEAR MISSES—UNCONTROLLED AIRPORTS. As reported in the March/April 1980 issue ("News" p. 14), the FCC has begun reassigning UNICOM frequencies for uncontrolled airports in 15 areas of the country where overlapping has been a problem. However, several airports have put their new frequencies into effect before the change has been indicated in the latest Sectional Chart. Two near-midairs occurred on the same day at the same airport near Seattle. Pilots were unaware the frequency had been changed. In each of the two incidents, a pilot was on the newly assigned UNICOM frequency and the other was relying on the frequency given by his chart. Use the frequency on the current chart (updated every six months). To be doubly safe, check the associated FSS for NOTAMs, or the Airport Facility Directory.

PETROL PURLOINERS. Higher fuel prices and scarcity of fuel in some areas have made victims of the light aircraft owner in more ways than one. The Aircraft Owners and Pilots Association reports fuel thefts from light aircraft are up again all over the country. Pilots are warned to check fuel levels in the tanks *visually* before taking off in an owned or rented plane—even if you topped the tanks before parking. Fuel thefts have not caused any accidents—yet.

HOT WINGS. Vent lines, which are supposed to expel fuel and vapors from the pressure relief valves, have caused explosions and fires in the wing tanks of some light twins when inadvertently disconnected. So far accidents of this type have occurred only on the ground. The aircraft had recently undergone wing tank maintenance. The disconnected lines allowed fuel vapors to become trapped in the wing and flow inboard toward the nacelle, where ignition occurred. The problem has been traced to improper replacement of fittings after inspection or maintenance. Following manufacturer maintenance instructions should eliminate the problem.

WATCH YOUR STEP. A *Queen Air* recently was forced to make an emergency landing after voltage regulators for its NICAD batteries failed, causing the batteries to overcharge and vent gas into the cockpit. The regulators had failed because the *Queen Air's* floor-mounted circuit breakers had been damaged by the heavy feet of pilots and passengers. A 1967 Beech Service Bulletin requires relocation of floor circuit breakers in all models of the Beech 65–80.

MARKING UNPAVED RUNWAYS

An Inexpensive System That Could Save Lives

Light and mark an unpaved runway for less than $3500?

Not likely, you say? Everyone knows it can cost in the hundreds of thousands of dollars to install runway, approach, and taxi lights, etc. for a paved runway—not to mention literally miles of expensive electrical cable and the accompanying electrical bills.

Why bother to spend all that money on a grass or dirt strip that doesn't have much traffic anyway?

Answer? To save lives and property. Any pilot who has experienced an emergency over unfamiliar terrain and searched in vain for a small, unpaved airport shown on his chart will underline that reply. Nothing is as elusive as a few hundred feet of turf runway when you are low on fuel and altitude. At night the difficulties are multiplied. Many a meadow or cow pasture has been mistakenly used for an emergency landing, sometimes with unhappy results, simply for lack of positive identification. Even familiarity with the field is no guarantee that you can locate it when changes occur in the environment.

For example, the pilot of a *Starduster* recently had an unpleasant surprise as he was returning from a fly-in barbecue near Delphos, Ohio even though he had taken off from the very same neatly trimmed grass strip that same day. However, during his absence the grass on the surrounding fields had been mowed—to approximately the same height as the runway, as it happened. In the fading light of the late afternoon the pilot landed on newly shorn but somewhat boggy turf, well short of the touchdown zone, skidded into an unpainted edge marker, and nosed over. Considerable damage to a cherished airplane.

If you have ever had trouble locating an unpaved strip in the daytime, try landing at an unlighted, or feebly lighted, field in the dark. Inadequate lighting can create shadows that distort one's perspective—as an Illinois pilot found out recently just when he felt he had everything in hand.

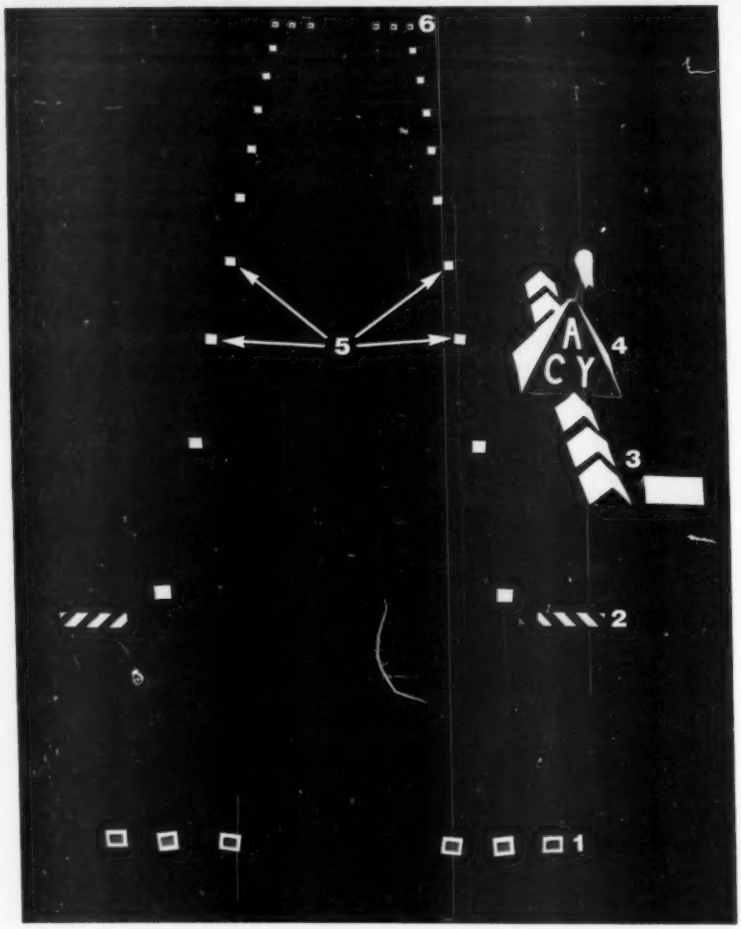
He was returning his Cessna 210, *Centurion*, to its home base in Annawan, Ill., after some engine work at Davenport, Iowa. His destination was an unpaved strip of pea gravel over sod some 30 miles from Davenport. The east-west oriented runway is in a largely rural, unlighted area. A house and a hangar abut the runway's east end, and the west end is surrounded by a field plowed to within three feet of the runway. A water runoff ditch on either side of the strip and perpendicular to it is approximately 300 feet from the 09 approach end.

The 25-year old pilot had 350 hours of experience, with 36 in the *Centurion*, but he had only one hour of total time in the preceding 90 days. Nevertheless, he departed Davenport with two passengers about 9:15 p.m., climbed to 7500 feet to overfly the Moline TRSA, and headed for the airport. There were no lights on the field, but he spotted a familiar configuration of house and hangar lights at the far end of the runway. A full moon rising at his back gave him fair visibility in the clear night.

After two low passes to orient himself, the pilot approached runway 09 from the northwest

Unmarked rural airfields are easily confused with truck roads or mowed strips of cropland.

Unpaved Runway Marking Components (Illustration)



1. Threshold markers
2. Aiming point marker
3. Alignment markers
4. Pyramid and windsock
5. Runway edge markers
6. End markers

and lined up his heading indicator and the house lights to put him over the centerline extention, using the hangar light as an indication of the left edgeline of the runway. He made the approach power-on, with full flaps, and at 75 kts. Everything seemed fine until touchdown, which took place in the plowed field well to the left of the runway. The pilot tried to steer the airplane across the furrows toward the runway with some success—until the nose gear struck the runoff ditch and broke off. The *Centurion* stood on its nose and collapsed inverted on the runway.

"Well, we made it," the pilot told his shaken but essentially unharmed passengers.

Still, why all the fuss for a few agricultural strips and private airports? Paved runways are the rule nowadays.

Are they? Of the 13,000 airports available for fixed-wing aircraft in the United States, *only about 5,000 are paved.* The remaining 8,000 unpaved airports are used by the majority of general aviation pilots.

In 1978, there were 235 accidents at these 8,000 unpaved airports. All but a handful occurred on landing. Most of the landing accidents were caused by the pilot's failure to recognize the airport or determine runway boundaries, resulting in a poorly executed approach that led to an overshoot, undershoot, landing on a closed runway or other unsuitable ground, running into ditches, cattle, etc.

Few of these accidents were fatal—only four, with five fatalities. All together 195 planes were substantially damaged and 31 destroyed—as well as various unlucky objects on the ground: planes, cars, tractors, hangars, stock and game.

Most of these small airports are not supported by federal funds and hence are not FAA regulated. Safety standards, set by state and local governments, must take into account the limited resources of the operators, who generally derive little or no revenue from transitory aircraft usage. Everyone is in favor of small airports, but economic factors limit what the operator can do in the interest of safety.

This is the dilemma which has led to a search for a safe and inexpensive way to mark the unpaved fields. State aeronautical officials in New Jersey approached the airports branch at FAA's Technical Center (formerly NAFEC) in 1977 with the project. If a reasonable marking system could be designed, which conformed to *national* minimum safety requirements, then airports from state to state would have standardized markings quickly recognized by the pilot wherever he flew.

The marking system that emerged from the research and experimentation consists of everyday materials sold in neighborhood hardware stores. It can be built from plans that any weekend carpenter can follow.

The core of the system is the identification marker. What was needed was a structure that could be seen a maximum distance without the aid of electricity. After testing different arrangements of designs and colors, the engineers found that a simple black and white pyramid, on a square base 16 feet on a side was the most effective overall. It is visible up to a distance of three miles—i.e., visibility requirements for a VFR day.

Since the pyramid shape is not used in any other aviation marking, its designation as the locator for an unpaved strip could become universal. For ready identification, the pyramid is located next to the runway, with its base parallel to the landing direction.

With the pyramid assuring the pilot that he has indeed located an airport, and not Farmer Jones' beanfield, the next question is *which* airport is it. All airports have an official three- or four-letter/number designator, which can be found in the Airport/Facility Directory when the pilot is doing his preflight planning (the Directory will also give vital statistics about the airport, including fuel availability, UNICOM, etc.). In this new marking system the designator is painted on the sloping sides of the pyramid marker. Numbers or letters approximately six inches thick and about three by four feet in size have been found to be readable at altitudes of 2,500 feet or even higher. Again, black and white proved to be the most readable color combination for all conditions.

After locating and identifying the airport, the visiting pilot's next concern is which way to land—or, *where is the windsock*? There is no standard site for the wind indicator, and at many unpaved airports it can be difficult to pick out from a background of trees or bushes. The new system positions the windsock right on top of the pyramid, so that there is no need to look further. Runway alignment is indicated by a series of six small tent-shaped markers, three forward and three aft of the pyramid. A fourth marker is placed at right angles, to show right hand pattern traffic, in the same manner as the L-shaped figures on a segmented circle. A black X on one of these markers designates a closed runway. Painting half of one marker red de-

notes a displaced threshold.

Runway edge marking, always a problem at night for unlighted airports, presents even more of a problem at unpaved airports; at night the pilots of aircraft attempting to land may have trouble picking out the touchdown zone or the lateral limits of the runway. The new turf marking system solves this problem at minimal expense by using retro-reflective material instead of electricity and wiring. Retro-reflection is a means of causing light beams to be reflected back directly at the sender. Light from the airplane's landing lights is picked up and reflected back by special plastic cells placed on non-electrified markers along the runway edge. Retro-reflection is much more effective than ordinary reflective devices, which allow the light to bounce off in various directions. The pilot can see the runway quite well from a mile out. Retro-reflection is coming into wide use on the nation's highways. In daytime, the runway edges are indicated by black and white panels which house the retro-reflectors.

Electric lighting in the new system is used only at night to floodlight the pyramid, to illuminate the approach and departure ends, and for the simplified VASI. Three green lights at either side identify the threshold, and three red lights are shown on each side of the departure end of the runway. The aiming point for landing, or "intercept," is designated by four white lights outside the runway on either side. Two elevated amber lights, in combination with the aiming point lights, make up a simplified VASI for night use. (When the amber and white lights are aligned horizontally, the pilot is at the proper angle for his final approach.)

For daytime use, an even simpler VASI consists of two plywood panels painted fluorescent orange and positioned in front of a third panel, which represents the aiming point. Again, horizontal aligning of all three panels indicates the correct approach angle.

Another problem peculiar to turf runways is the difficulty in judging when an approach to land should be aborted. Estimating distances with the unaided eye is very hard in the dark, or even in the daytime when the turf of the runway blends into the surrounding terrain. The presence of red lights at the end of the runway helps, but even more helpful is a distinctive marker. The new system uses a black and yellow side marker positioned one-third of the distance down the runway. If the wheels have not touched down by this point the go-around should be started immediately. The new system also uses markers (a yellow arrow on a black panel) to show the exit to the taxiway.

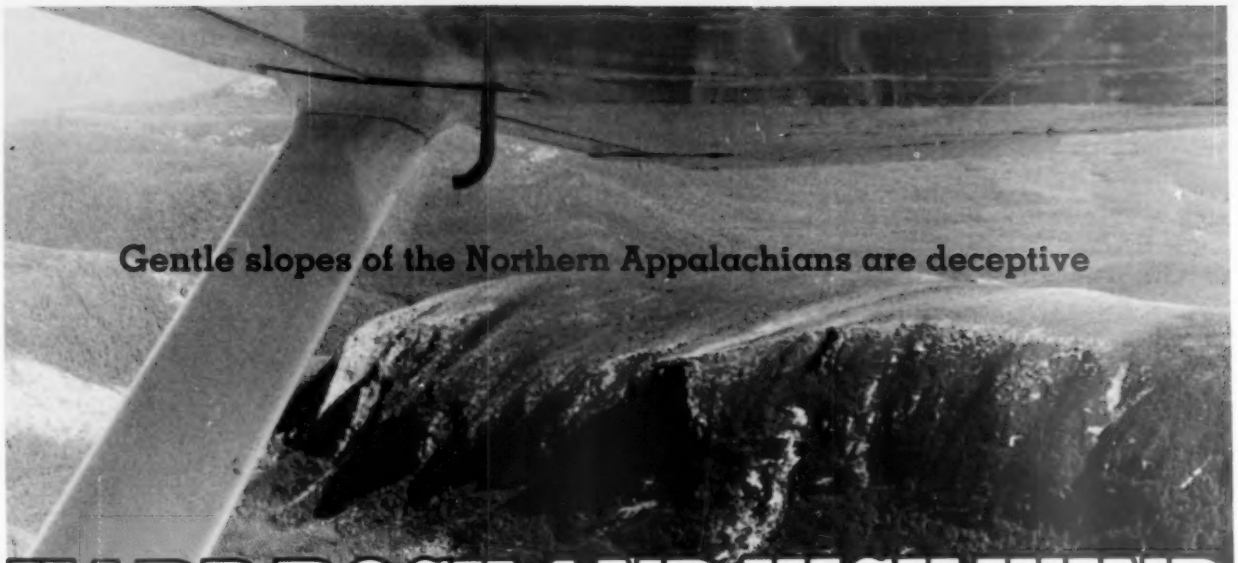
Field testing of this turf marking system is now going on at Twin Pine and Alloway Airports in New Jersey, and at Pleasant Valley Airport in Brodheadsville, Pa. Pilots are invited to try out the facilities and comment. Plans and a list of materials needed for installing this version of turf runway markers are available free from FAA's Technical Center, ACT–410, Atlantic City Airport, NJ 08405. Original estimate of the cost for a 2,400-foot runway airport was about $2,500, of which half went to lighting (1978). Inflation will have pushed that figure higher, but Victor Dosch, who helped to design the system for FAA, believes it could still be installed for under $3,500.

A pretty low figure for making a turf runway a whole lot safer than a shot in the dark. ■

Photos by Diane Sewell

"It takes the fear out of landing at unpaved airports," according to John Elnitski, owner of Pleasant Valley Airport at Brodheadsville, Pa. Elnitski, with help from his wife and teenaged sons, built the Technical Center's unpaved runway marking system in three months last year for his 2600-foot grass strip in the Poconos. "Student pilots, airline pilots, everybody thinks it's the greatest thing in the world. I just wish more people knew about it." Airport operators and pilots from as far away as Georgia have landed at Pleasant Valley, some of them dropping in out of curiosity after flying over and seeing the markers.

Elnitski lent a few personal touches to the design. He used galvanized metal and aluminum sheeting rather than plywood for durability. He painted the airport elevation (770 feet) on the pyramid and the runway numbers (18-36) on alignment markers on either side of the pyramid. The markers help dramatically to differentiate Pleasant Valley's runway—a former farm field itself—from literally dozens of other neat fields in the area that could be mistaken for turf runways.



Gentle slopes of the Northern Appalachians are deceptive

HARD ROCK AND HIGH WIND

Where the Appalachian Mountains reach up into New England they are divided by the Connecticut River into two distinct ranges: the Green Mountains of Vermont and the White Mountains of New Hampshire. Since 1958 the extension of the White Mountains into Maine has been called the Longfellow Mountains. Vermont's Green Mountains form the most continuous north/south ridgeline, running almost 200 miles from Massachusetts to Quebec Province, but the highest point (Mt. Mansfield) is only 4,393 feet. The higher peaks of the White Mountains are bunched in the center of New Hampshire, dominated by Mt. Washington (6,288 feet). In Maine the higher elevations are in the north, with Mt. Katahdin (5,267 feet) marking the terminus of the Appalachian trail.

Since these mountains, unlike Mt. St. Helens in Washington State, are non-volcanic origin, no soaring cones or dramatic escarpments are in evidence. The Appalachians developed due to internal pressure as a series of folds or ripples in the crust of the earth. Millenia of erosion, plus the work of numerous glaciers have etched out a gallery of gently curved peaks, small basins and valley passes, or "notches." The area can be easily transited in light aircraft in good weather. Mountain flying accidents are not common, but the majority of those that do occur are ascribed to pilot error—and considered preventable. In many cases it is difficult for the accident investigator to pinpoint the cause. Usually the accident takes place in a normally functioning aircraft, with no particular urgency or pressures affecting pilot performance.

Some local observors believe that the absence of severe terrain features lulls unwary pilots into relaxing their vigilance when flying over these apparently gentle New England slopes, leading to a situation where they are unable to cope with changing weather, rising terrain or downdrafts. One common type of mountain terrain accident in New England involves aerial sightseeing. In many instances the pilot became engrossed in watching for moose or beaver and failed to realize the rate at which the airplane was descending, or the terrain was rising.

Misjudging distance above the ground often occurs in these mountains because of the pilot's unfamiliarity with the size of the trees. The mixed hard woods, spruce and fir of northwestern Maine's timberlands, for example, are often considerably smaller than the stands of trees in the southern Appalachians, or in the western mountains; a pilot who fails to take this fact into consideration might easily *over-estimate* his terrain clearance. Additionally, pilots from more southerly areas are often surprised by the relatively low elevation at which the tree line occurs in New England. Estimating distances from barren ground is difficult.

A typical accident occurred in August during a charter flight near Mt. Katahdin. This highest of Maine's peaks is located in Baxter State Park, a 200,000 acre Wilderness Area in northern Maine. A party of four bear hunters had been flown into a camp a few miles west of Baxter Park at the beginning of the week and were scheduled to be brought out on Saturday to Moosehead Lake by a pilot working for a local flying service. The same operator had flown the four men to their camp in two separate trips in a float-equipped Cessna 180. On each trip the aircraft had been at near maximum gross weight, as the hunters had brought in a dozen cases of beer in addition to six rifles, considerable ammunition and fairly extensive camping gear.

When the pilot landed on a small pond near their camp on Saturday for the return trips, he was requested to take all four men out together, as they wished to look over the game preserve in the Park from the air on their way back. They wanted to have their equipment brought out subsequently and they had taken no game. The pilot explained that the airplane was not approved for five adults and limited as regards to total weight. The hunters insisted, arguing that they averaged well under 170 lbs. per man. The pilot attempted to contact his operator but was un-

Shin Pond, Me. Shallow wooded slopes are known for turbulence.

successful. He was finally prevailed upon to take all four, with the understanding that he would maintain a minimum safe altitude at all times.

The wind on the pond was nearly calm, so he was able to use ample takeoff distance over the water, and climbout was normal. He flew over Baxter Park in the vicinity of North Brother Mountain and continued on a southeasterly course, headed for the Great Basin where a number of moose and bear sightings had been reported recently. For some reason (which he could not explain) he entered the airspace over North Basin instead, where an adult bear was spotted by one of his passengers. He made several shallow S-turns over the area to accommodate his passengers' desire to scan the heavily wooded area. Then he noticed that he was losing altitude and opened the throttle. There was no increase in manifold pressure (22 inches at 2,300 rpm).

Although he now lowered the nose and applied full power his airspeed decayed to 75 mph and he was unable to maintain his altitude over the ground, which appeared to be "almost level, or maybe a slight rise." He could see no alternative to impacting the trees and decided to land straight ahead with the aircraft under control. He cautioned his passengers to prepare for the impact (one did not have a seatbelt on), then dived the airplane briefly in order to pick up enough airspeed to flare above the tree tops.

Impact was severe and the 180 flipped over and came to rest in an inverted position. The smell of leaking fuel was very apparent to the pilot, who kicked out his window and called to his passengers to follow him out of the airplane. He was just able to get all of them to the ground and away from the plane before it caught fire. The blaze was seen by a fire patrol aircraft, and the five survivors were rescued by helicopter two hours later. No one was badly injured.

In his statement to investigators after the accident, the pilot stated that he believed engine malfunction to be the cause of the accident. However, the engine had given no evidence of malfunction. In any event, it would have been unusual for this type of engine, even in a new condition, to achieve more than 22 inches of manifold pressure at the elevation of impact, which was 2,700 feet. The terrain in this area, in the direction of aircraft travel, rises at an average rate of 700 feet per mile, but the angle of rise is not readily apparent from the air. The investigator's report also suggested that with five persons on board the 180 would have been close to or above maximum gross weight—it was not possible to determine this precisely because of a discrepancy in the statements regarding fuel on board.

The five occupants were extremely fortunate to have survived the fire and to have been rescued so quickly. Northwestern Maine and the adjoining province of Quebec is a very sparsely settled area with millions of acres of dense timberland. The section of Maine that lies north and west of Millinocket, about 6,700 sq. miles, has no public airports for land planes. There are in fact very few roads or other open areas between the trees where an aircraft could be put down safely in an emergency. Essentially the only treeless areas are above-timberline balds, liberally strewn with granite, or bogs, which may look solid enough from the air to land on but are treacherously soggy. Most of the local flying in this area is done with floatplanes.

The hundreds of ponds and lakes of northern Maine make it very inviting country for the floatplane pilot, but he has to remember that each body of water has its own characteristics for flight operations, and that an accident on an isolated pond could have very serious consequences. The wind does not always accommodate the pilot by blowing down the length of the lake, and even small hills or bluffs nearby can produce serious downdrafts when wind velocity is greater than 10 to 15 knots.

In May of 1979 a pilot took off from Shin Pond, about 30 miles northeast of Mt. Katahdin, at 1:00 p.m. in an *Aeronca*, accompanied by his son. The pilot's logbook showed 416 hours of total time, with 351 in the *Aeronca*. Shin Pond extends for about two miles in a north/south direction; the seaplane base is located in a northwesterly bay. The visibility was clear, with a strong westerly wind averaging 50 knots and gusting to 60.

The aircraft was observed taxiing out of the bay and taking off to the south with a strong westerly crosswind. After liftoff the *Aeronca* was turned into the wind. The course brought the pilot close to a heavily wooded ridge in the west shore of the lake. At this point, according to his statement, he encountered "severe turbulence and downdrafts." He turned right 180 degrees and flew downwind across the width of the narrow pond in order to escape the turbulence. However, he continued to lose altitude and was unable to clear a stand of trees on the east shore of the pond and crashed into the woods. The pilot was injured seriously, and his son received minor injuries. The aircraft was heavily damaged, but fortunately did not burn.

According to one witness, an experienced bush pilot, the injuries might have been avoided if the *Aeronca* had been held into the wind, so that impact would have been made at virtually zero groundspeed. The *Aeronca* pilot's subsequent conclusion was simply that he "should have stayed on the ground."

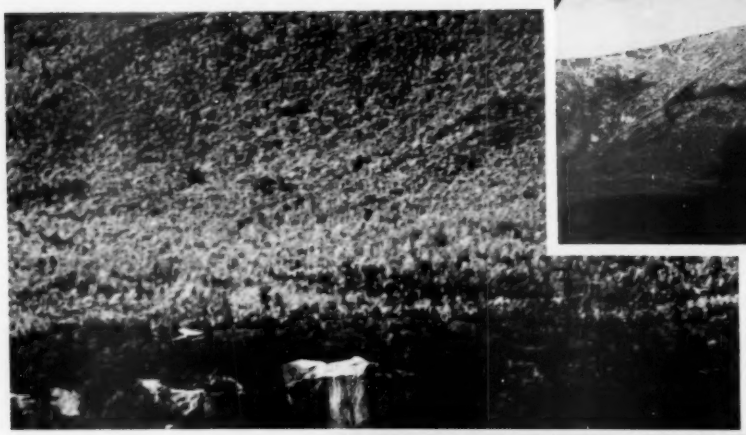
Hopefully it was a lesson well learned. Wind velocity has to be considered a key factor in planning a takeoff from a pond even in these small mountains, where strong downdrafts can pin you down like a giant hand.

Local turbulence is a common characteristic of the northern Appalachians, despite their modest size and gentle appearance. Mt. Washington, in the White Mountains of New Hampshire, at 6,288 feet has recorded the highest wind velocity on earth, an incredible 231 mph (May 14,

Landing fields are few and far apart in the big woods of northern Maine.

New England ridges like these produce vicious up and down drafts when the wind velocity is high.

Sightseeing plane (center) near steep bluffs may be in for an unexpected elevator ride—down.



Shallow crest of Mt. Washington site of highest recorded wind velocities in the world.

1934). Scientists have difficulty explaining this phenomenon. The half dozen mile-high mountains in the Presidential Range of the White Mountains do not appear to present a formidable or significant wind barrier, yet 100 mph winds are not uncommon. On any given day the winds can be quite calm in the morning and quite savage by midafternoon. Even veteran local pilots are occasionally lulled by the benign appearance of these mountains, on a serene summer day, into flying without first checking the weather forecast.

A good example involved a sightseeing flight from White Mountain Airport at North Conway, N.H. The commercial pilot had nearly 13,000 hours of logged time, with 890 hours in the WACO UPF–7 he was flying on this occasion. He had made dozens of sightseeing flights in the White Mountains and was known as an extremely competent pilot. However, for some reason on this busy day, with the mountain range in full summer bloom and the visibility unlimited, he neglected to get a weather forecast. (Official Weather Service reports indicated winds aloft of 45 knots in the vicinity of North Conway, gusting to 65 knots.)

The biplane took off at 3:15 p.m., with two passengers up front and the pilot flying from the rear seat. He proceded to the northwest, approaching Black Cap Mountain at an altitude of 2,700 feet after clearing the ridge line by approximately 300 feet. While executing a southerly left turn the WACO experienced a rapid rate of descent on the leeward side of the mountain. Although he reported that the engine was operating normally, even with full power he was unable to check the altitude loss and struck the side of the mountain at a level of 2,000 feet. The airplane pancaked into a stand of spruce trees before impacting a hard rocky ledge. All occupants escaped with minor injuries, and the airplane, although substantially damaged, did not burn. The pilot acknowledged that the accident would have been prevented if he had adhered to his own rule of avoiding flying over ridges when the wind velocity was over 40 knots.

In contrast to Maine and New Hampshire, Vermont is straddled by a fairly continuous ridge of the northern Appalachians which extends from Massachusetts to the Canadian border. These mountains are not high, never reaching up beyond Mt. Mansfield's 4,393 feet at Stowe, but they do form a significant impediment to the movement of air—and sometimes are a problem for airmen. The state is bordered by the Connecticut River valley to the east, and the Hudson River valley and Lake Champlain to the west. Skies may be clear over the valleys but clouded or heavy with precipitation over the ridges. The most common type of mountain flying accident in Vermont appears to result from attempts to fly over the ridges VFR in instrument weather. Such accidents are not frequent, but very often they are fatal, as was the following crash near Jay Peak in northern Vermont.

The pilot was a flight instructor with 2,800 total hours but no instrument rating. He took off from Fulton in upstate New York in his Cessna 180 on a November afternoon with two passengers bound for Willimantic on the Maine coast north of Augusta. According to the National Transportation Safety Board, the Utica (N.Y.) flight service station was contacted by the pilot at noon for a weather briefing and for advice on the best

possible route. The FSS specialist indicated that all routes were in IFR conditions with low ceilings, rain and fog expected to persist. He gave a weather synopsis, as well as the forecast winds aloft. The pilot did not file a flight plan or disclose whether he intended to carry out the flight.

At 12:32 p.m. Syracuse Approach Control was contacted briefly by the 180 pilot, who reported having just taken off from Oswego County Airport. His transponder was squawking 1200 (VFR flight). Shortly afterwards a controller at Burlington (Vt.) Approach Control noticed an unidentified target on his radar scope tracking across Lake Champlain with the transponder in the VFR code—a disturbing behavior in view of the instrument weather prevailing over the area. He observed the aircraft head northeast to Franklin County Airport near the Canadian border and then turn east, proceeding in a straight line until it disappeared about one mile north of Jay Peak Mountain. At this hour the weather at Newport, Vt., about 15 miles east of Jay, was reported to have a ceiling of 1,000 feet overcast, with fog and rain, visibility two miles. The elevation at the summit of Jay Peak is 3,861 feet.

A hunter staying at a camp near Jay later reported having heard an aircraft circle the camp at a low altitude. He stated: "The clouds had just settled down low on the mountains, and I could not see the plane. It headed across from camp, maybe half a mile . . . the weather in this mountain range changes very rapidly. It had been a fairly clear day down low, but the clouds settled in fast this certain afternoon."

Another witness, a truck driver from Jay, was standing in front of his house at this time when he heard an aircraft go by overhead, traveling northeast. After a while he heard the plane coming back overhead, headed in the opposite direction. There was a heavy fog, and he could not make out the airplane visually.

Six days later the aircraft was spotted lying at the 3,300 foot level near Jay Peak Mountain. A paramedic team was brought to the area by helicopter from Plattsburg Air Force Base. There were no survivors.

Similarly tragic was a flight across Vermont in the opposite direction, when a non-instrument rated pilot attempted to fly himself and his wife from Wicasset, Me., to Michigan via central Vermont. The pilot was flying a Piper PA-24, in company with a friend in a Cessna 175, who was instrument rated and had filed IFR. Both aircraft took off at approximately 9:30 a.m., under locally VFR conditions, and were able to maintain visual contact with each other for the first 20 minutes of flight as they flew toward Lebanon, N.H., on the Vermont border. The 175 pilot reported subsequently that as he approached Lebanon he was given an altitude change by air traffic control from 6,000 to 8,000 feet, which put him into solid IFR conditions. He estimated the base of the cloud layer over the mountains as approximately 6,500 feet. He stated:

"I was almost solid for the next 40 minutes or so, getting only an occasional glimpse of the ground. I was in constant communication with N5039P (the PA-24), talking to him six to eight times. I told him we were solid at 8,000.

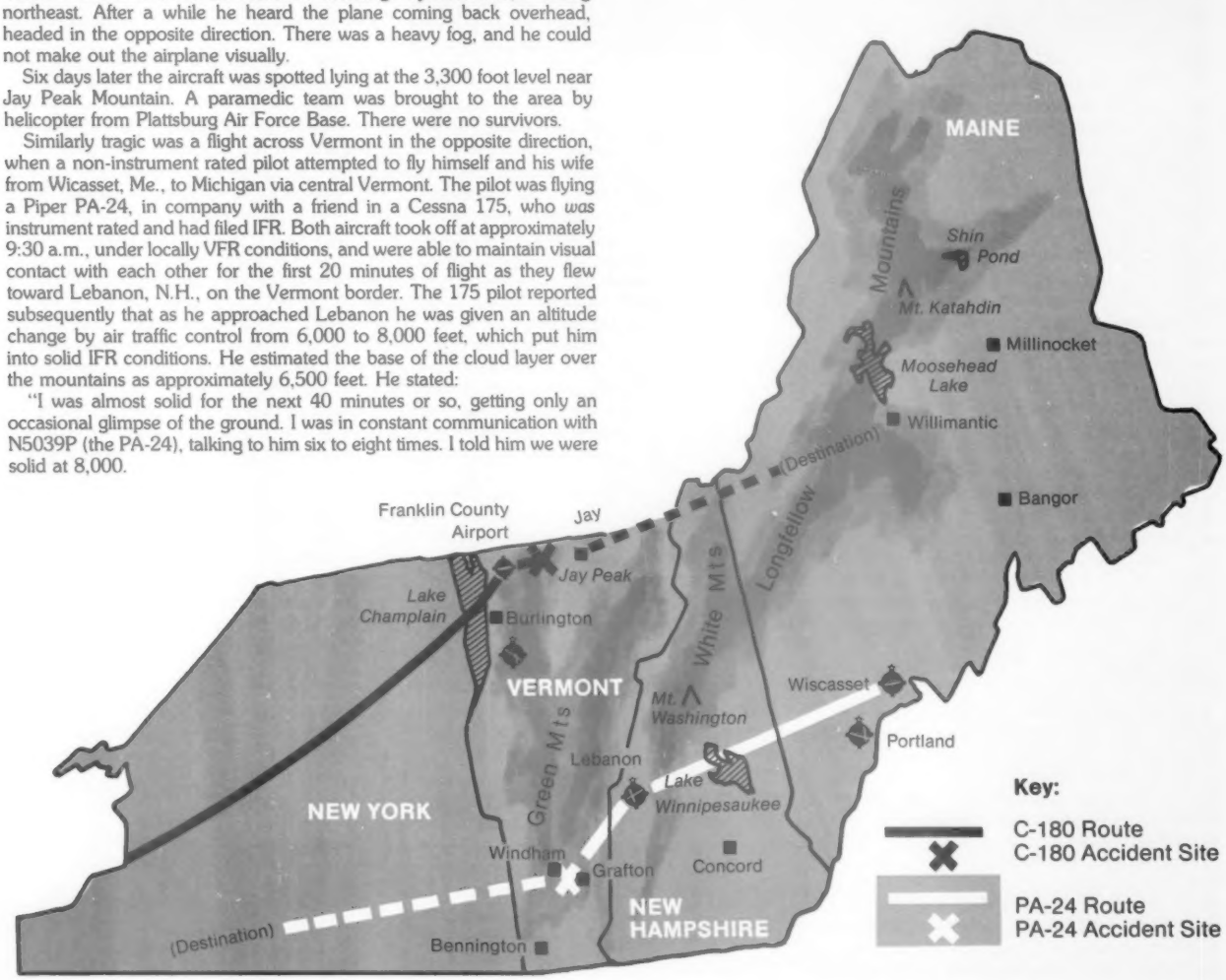
"We broke into a clear area over some lakes about 20 miles east of Lebanon VOR. I would estimate this hole to be about 30 miles across. I gave N5039P a position report, north on the 360 radial from Concord. He responded by giving his position as having crossed the Lebanon VOR and was now in the clear approximately 15 miles west of the VOR on Victor 496 at 5,500 feet. He stated that he had called Flight Watch for weather and was going to climb to 10,500 feet and said something about 'clear ahead or above'. We never heard from him again."

At 11:07 a.m. a witness on the ground in Grafton, Vt., a few miles east of Windham, saw an airplane spinning out of the sky to the west. He heard it crash approximately two miles away.

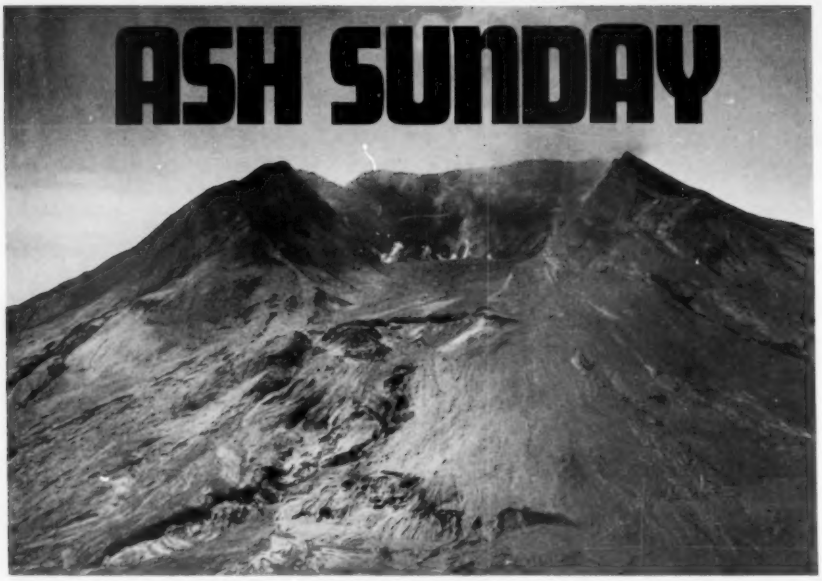
Another witness, a pilot who was flying over the town of Grafton at 11:55 a.m. at 4,500 feet, reported occasional rain showers and visibility 10 miles in haze, ceiling unknown.

The aircraft wreckage was located on the side of a mountain at the 2,200 feet level, approximately two miles east of Windham. The angle of impact was apparently vertical. All of the wreckage was found in a crater, which measured five feet deep and six feet in diameter. There were no survivors.

The Appalachian Mountains in New England may not offer any challenge to climbers of tall or difficult peaks, but they should never be taken lightly by pilots of small aircraft. The scenery is great, the fishing is fine, and the skiing is exciting, but the wind and the weather require your respect. Those small mountains are made out of very hard rock. ■



ASH SUNDAY



On Sunday morning, the 18th of May 1980, the sky over eastern Washington was obscured by a strange discoloration which brought the day to a premature close. Mt. St. Helens had erupted for the first time in over a century, with a sudden violence that caused over 100 deaths. By daybreak the next morning a carpet of volcanic ash covered a vast area of the northwest, as far as Wyoming and Montana. At some towns in the Columbia River Basin, east of the Cascade Mountains, like Moses Lake or Ritzville, the grey ash was ankle deep, and the sky was still black with particles suspended in the air. Local travel came to a standstill, cars were immobilized and aircraft grounded. Citizens donned hospital-type masks. Airports were closed and no one had any idea when they would re-open or how destructive the ash could be to aircraft exposed to it.

Today, over five months and a half dozen additional eruptions later, the problem has not gone away. Airport ramps, runways and taxiways have been cleaned up, and travel is back to normal, but the ash—an estimated two to six billion tons of it—will evidently remain in the environment for years to come, to be periodically stirred up by high winds or perhaps added to by more volcanic activity. Much ash is still evident in the grassy areas of airports and in the farm fields and slopes surrounding them.

Airmen, however, are learning to live with volcanic ash and to understand it. The chief concerns have centered on acidic content and abrasive effects. Analyses have shown that these factors vary considerably, according to direction and distance from the volcano, as well as from one eruption to another.

Present indications are that acidic content increases with distance from the volcano, as the sulfur dioxide from eruptions is converted to sulfuric acid from moisture in the air. Airports as distant as Caspar, Wyo., have experienced highly acidic fallout, quite capable of corroding metal, while in general the ash in Washington and Oregon has been nearly neutral—or even alkaline in some areas. The corrosion potential of acidic ash is increased, of course, by moisture, which is why it is considered important to remove highly acidic material from the airplane by blowing or brushing before washing it down.

The major constituent of the ash, silicon dioxide (about 65%), accounts for its abrasiveness. It will easily scratch glass, as well as aluminum and other metals. The very fine ash, measuring as small as one micron or less, usually can be removed from an aircraft surface by careful brushing without causing scratching, but operators located closer to the source, where the ash is noticeably heavier but not as acidic, have preferred to rely on hosing aircraft down.

The ash also has a high static charge. Following the first eruption, power lines at Yakima, Wa., were shorted out by arcing caused by infiltration of strongly ionized particles. In aircraft this could result in alternator or other electrical failure.

However, while several light aircraft have made forced landings because of engine stoppage due to ash in the induction system, to date the volcanic ash fallout on aircraft on the ground has not been linked to a single accident. This may be due to early warnings posted by FAA's Northwest Region to prompt remedial measures undertaken by pilots and operators. Operators of large fleets and FAA officials all anticipate that sooner or later maintenance problems related to ash will arise. This may take the form of cylinder or valve abrasion, seal leakage, brake or alternator failure, or other problems as yet undisclosed. But they see no reason why aircraft of all kinds may not be operated safely throughout the northwest, despite the continuing presence of volcanic ash on the ground and in the air, so long as certain simple precautions are followed. These include:

How seriously has Mt. St. Helens affected flying in the Northwest ?

1. *Do not fly in the immediate vicinity of the volcano.* While geologists have learned to recognize from certain indications (so-called harmonic seismic activity) when an eruption is imminent, the mountain can also erupt without warning, releasing tremendous natural forces that could overwhelm any aircraft. Some observers are certain that the first aviation casualties will occur as a result of a large number of pilots recklessly flying around in the restricted area around Mt. St. Helens without prior approval or radar separation by air traffic control. There are approximately 40 cases of illegal penetration being investigated at the present, many of which are expected to result in pilot certificate suspension. In the event of an aircraft crash during a period of volcanic activity, it is unlikely that rescue teams could be sent to the assistance of survivors.

Several near-miss incidents have occurred in the Mt. St. Helens restricted area, despite frequent patrolling by FAA and Forestry Service aircraft. A recent incident involved a National Geological Survey helicopter which was hovering 100 feet above the mouth of the crater to allow scientists to scrutinize the interior. Suddenly, the scientists were startled to see a fixed-wing aircraft pass beneath them and disappear in a cloud of ash and steam.

2. *Keep it clean.* Ash fallout may occur even during inactive periods of the volcano, due to gusty winds or changing atmospheric conditions. Remove the ash from all aircraft surfaces as appropriate by water or air hosing or brushing. Taxiing speed should be kept low. Avoid taking off or taxiing over pavement where ash or dust has been stirred up by other aircraft. Wait till it settles. Rolling takeoffs are suggested whenever appropriate. Waxing the windshield and other aircraft surfaces may reduce abrasion from wind-borne ash. Paint abrasion on the face of a propeller blade or wing and empennage leading edges are good indications of airborne exposure to ash. Be especially careful not to use carburetor heat on the ground. Some of the ash particles are too fine to be filtered out of the air intake systems. Make sure air filters are serviceable. Make certain that drain holes are not clogged by ash.

3. *Watch exposed seals for leakage*, especially around oleo strut and propeller spinner. These areas should be wiped clean daily as well as before flight.

4. *Anticipate unusual brake and tire wear.* One operator of a large piston-driven fleet in Spokane has noted an incease in the rate of brake wear of about 40% and a 20-25% increase in tire wear from ash abrasion.

5. *Change engine oil and oil filters more frequently than usual*—unless spectrographic analyses show no increase in harmful metals in the oil. An increase of iron particles has been

noted in the Portland area.

6. *Expect possible problems with vacuum driven instruments.* Ash intake will affect bearing life and possibly the vacuum pumps as well.

7. *Monitor electrical power sources.* The high conductivity of the ash may short out some systems. Abrasion may increase wear on generator brushes.

8. *Check pitot systems and drain holes.* Look for possible clogging or abrasion.

9. *Watch for bulletins from engine or aircraft manufacturers* on maintenance in fallout areas.

In short, we are talking about operating aircraft in an environment where the corrosive and abrasive pollutants have risen to a considerably higher level than normal and which are likely to remain above normal for many months or even years. There is no known safety reason to curtail operations, and in fact, the volume of traffic in the northwest has returned to approximately pre-eruption levels. Again, there is no indication of an increase in accidents related to maintenance. *However, an increased vigilance in pilot and operator maintenance practices is recommended,* at least until we have had more time to study the changed conditions as they affect aircraft.

Several billion tons of ash will be around for quite a while. ■

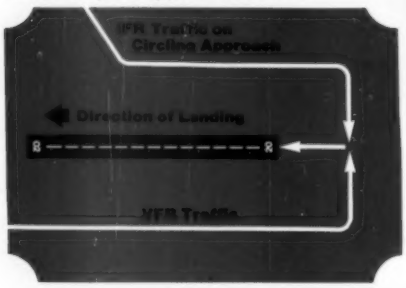
Yakima (Wa.) Air Terminal appears covered with sand. Ash particles are finer than sand grains.

Before and After. Violent eruption of Mt. St. Helens in Washington State reduced mountain's height from 9,600' to 8,400' and blew billions of tons of ash into the atmosphere. A "rotten egg" odor near volcano is evidence of presence of corrosive sulfates from continuing exhalations. Use of the airspace within a 10-mile radius of Mt. St. Helens is restricted to official or accredited press use and requires prior air traffic approval. The area is patrolled.

turns to land

If you are making an instrument approach to an uncontrolled airport with a circling-to-land procedure, and you break out in the clear to find VFR conditions prevailing at the airport, are you obliged to complete your landing using only turns in the direction indicated at the airport? Or can you turn in any direction that appears to you to be safest?

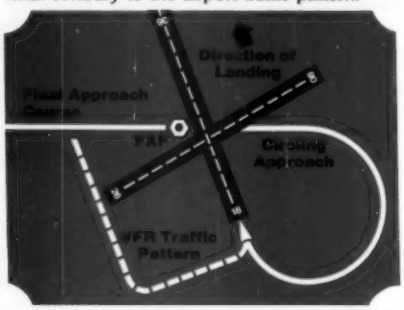
This question has troubled a number of instrument-rated pilots lately, but it is also of concern to VFR pilots. On a day when the ceiling is too low to encourage VFR crosscountry flight, some VFR aircraft could be in the pattern practicing landings at a time when IFR traffic has been cleared to an instrument approach. *Does this mean that two aircraft could legally be approaching the same runway threshold at the same time from opposite directions?*



Strangely enough, it does. Although FAR Part 91.89 states that all turns at an uncontrolled airport are to be made to the left (unless otherwise indicated by a segmented circle or flashing amber light), a pilot on an instrument approach governed by circling minimums is authorized by the Airman's Information Manual to "maneuver the shortest path to the base or downwind leg, as appropriate . . ."

The pilot is cautioned that VFR or other flying may be in progress at the airport, and that he should consider standard direction turns; but he is not limited to such turns. The direction of his turn(s) onto final will depend upon where he is when he establishes visual contact, in relation to the approach end of the runway, and such factors as cloud cover, extent of authorized circling area, wind direction, and visibility—as well as the presence of VFR traffic in the pattern.

A circling-to-land procedure is required for any instrument approach where the final segment of the course does not line up with the approach end of the runway, so that the pilot is unable to land straight in. The approach course may terminate at some point adjacent to the runway, at an intersection of several runways, or even at the departure end of the runway. From this point, it may not be possible to complete a landing without maneuvering somewhat contrary to the airport traffic pattern.



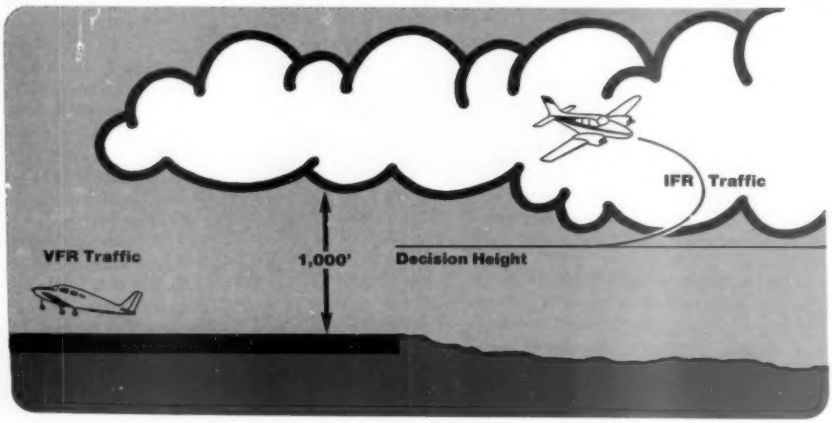
Depending upon the terrain and weather phenomena, an aircraft may experience IFR conditions all along the early segment of the approach and nevertheless encounter ceiling and visibility conditions well above VFR minimums at the airport.

Since the IFR aircraft, when cleared for this approach, is given ATC separation only from other IFR aircraft, the pilot must assume his own responsibility for staying clear of any active VFR aircraft while preparing to land. He should have thoroughly familiarized himself with the terrain features of the airport and be able to anticipate the direction of flow of VFR traffic under prevailing conditions. If possible, he should contact UNICOM on the field to learn if it is in use by VFR aircraft. Turns against the normal pattern direction should only be made when such a maneuver is clearly in the interest of greater safety in landing and presents no threat to aircraft in the pattern. He should always consider executing a missed approach when any aspect of a landing appears to jeopardize safety.

On their part, pilots who operate VFR at any uncontrolled airport with an instrument approach can increase the safety of their operations by anticipating the flow of inbound IFR traffic, in conditions of low ceilings and poor visibility. This information is normally available from airport management or from instrument approach charts.

VFR pilots should be prepared to avoid traffic that is landing but not following the pattern.

Conditions of this kind are infrequent, but they occur often enough to deserve the consideration of all concerned pilots. Expecting the unexpected means no unhappy surprises. ■



The Original French Connection

To most airline passengers on a modern jet, the only significant difference between flying from New York to Paris and vice versa is that the latter trip takes about an hour longer because of prevailing winds. To pilots in the 1920's seeking fame and fortune for the first nonstop continent to continent crossing, the east-west route was a virtual impossibility. Headwinds of 50 mph could extend the 3,600 mile journey by 50%, given contemporary airspeeds.

The first attempt was made by Charles Nungesser, France's third ranking WWI ace. Nungesser had always emerged victorious from his wartime adventures, despite being wounded 17 times. Once he accepted a challenge to single combat with a German ace, and was undaunted when not one but six came to oppose him, led by a pilot named Hermann Goering. Nungesser flew straight into the German squadron, blasted two from the sky, and escaped when he ran out of ammunition.

Nungesser found peacetime barnstorming inglorious. How better to regain his lustre than by completing a flight everyone said was impossible: Paris to New York!

Friends persuaded him to take along navigator Francois Coli, another wartime flyer, who fitted well with Nungesser's devil-may-care image. They acquired backing and a long-distance Levasseur PL-8 biplane they named *L'Oiseau Blanc*. It had a fuel capacity of 880 gallons, a single 450 hp engine, and a cruise speed of 100 mph.

Every unnecessary ounce was sacrificed for the airplane's range, calculated at 4,000 miles in still air. Like many early aviators, Nungesser believed that an equivalent weight of fuel would be more useful than a radio or survival gear. Said Nungesser, "I am thinking of flying to New York, not of saving my skin."

On the evening of May 7, 1927, favorable weather over the North Atlantic was reported, but the next morning it was raining. Nungesser, knowing that Lindbergh and other Americans were poised to fly the ocean, decided to risk the imperfect conditions.

At 5:00 a.m. he and Coli took off. All France held its breath as favorable news of their progress trickled in. But *L'Oiseau Blanc* disappeared over the Atlantic, never to be seen again.

Two weeks later Charles Lindbergh made history, but the far more difficult east-west route continued to challenge airmen and claim lives. Twenty more unsuccessful attempts were made in the next three years, bringing the number of fatalities to twelve. Two partially successful attempts failed to make it to New York and landed at Newfoundland. It was up to another pair of Frenchmen, Dieudonne Costes and Maurice Bellonte, to succeed where Nungesser had failed.

Costes was a WWI hero out of Nungesser's mold. A licensed pilot at 16, and a flying terror on the Mediterranean front, his flying career was noted for a chronic inability to accept discipline. After the war he flew commercially on the Paris-London run, where he met Maurice Bellonte, a soft-spoken mechanic-turned-pilot, expert navigator, and wireless operator. Costes was first to fly the South Atlantic, and holder, with Bellonte, of the world long-distance record (Paris to Manchuria, 4,910 miles).

He and Bellonte painstakingly examined the histories of previous North Atlantic flights. One thing was clear: enormous fuel reserves were not the only answer to prevailing winds and the Newfoundland fog and storms. Their aircraft, similar to Nungesser's was one of the best long distance planes available. The 650 hp single engine, open cockpit Breguet 19 was literally a flying gas tank, carrying almost 1200 gallons of fuel—enough to travel 5,000 miles in still air.

Nevertheless, Costes and Bellonte concluded that Nungesser's lack of weather briefing and instruments for blind flying had probably been his downfall. Their *Question Mark* was equipped with the latest instrumentation, including the newly invented artificial horizon. They also insisted on the most powerful radio they could find, one with a 600-mile range that would keep them informed through ocean liners, on weather conditions and enable them to obtain directional fixes from ships equipped with the loop directional finder.

Finally Costes had patience, and he was determined to wait for ideal weather, even if this meant postponing the flight until next year.

On September 1, 1930, a rare 24 hours of fair weather and easterly winds over the North Atlantic was forecast. The *Question Mark* took off, heavily laden with 4½ tons of fuel, emergency gear, and a cornucopia of provisions, including fruit, cake, soup, coffee, champagne, and several pounds of sugar cubes.

Over the mid-Atlantic, they zig-zagged around potentially turbulent areas instead of following the shorter great circle route. The flight soon became a matter of sheer physical endurance. Costes wrote: "A pilot has the sensation of being completely at one with his machine . . . the roar of the 650 hp engine fills the ears and hits you in the pit of the stomach, like the violent beating of the heart you hear after hard exercise."

Hours droned on over the seemingly endless expanse of ocean. Bellonte released smoke flares to determine wind direction and kept in constant touch with ships ahead of them. They flew for 20 uneventful hours with clear skies and tailwinds, but as they approached the Grand Banks off Newfoundland, they encountered fog so thick Bellonte could not see the wingtips. By daybreak the fog had cleared, but now the gentle tailwinds were gone, and soon the *Question Mark* was buffeted by increasingly stronger headwinds, gusting up to 100 mph. They flew on, but the unceasing headwinds and dense black storm clouds convinced them to detour yet again. They flew south for 100 miles, looking for a break in the impenetrable cloud banks.

Soon they sighted Nova Scotia, but now an unexpected rainstorm drenched their open cockpit, making their instruments almost unreadable. Not only was the small wind-driven generator that powered their radio put out of commission, but they had detoured an estimated 600 miles dodging storms, leaving barely enough fuel for the final leg and no margin for error. Fortunately, they were able to follow the coastline visually until they landed at New York.

And so, after flying 37 hours, with the fuel tank almost dry, the two exhausted Frenchmen touched down safely on Long Island, where they were carried off on the shoulders of an enthusiastic mob and congratulated by Charles Lindbergh on a feat which he declared greater than his own.

France was wild with joy. Monuments were erected to the new heroes, as well as to the late, lamented Nungesser and Coli. Nungesser was never really forgotten, least of all by an old enemy. When France was occupied by Nazi Germany, the chief of Hilter's *Luftwaffe*, Hermann Goering, ordered his monument destroyed. Costes and Bellonte's remained intact.

BUSCH FLYING. World's largest non-rigid hot-air blimp, seen here on its inaugural flight in Bedford, Mass. Although lift is similar to that of a conventional hot-air balloon, this blimp, manufactured by World Balloon Corp. of New Mexico, is not at the mercy of the winds. A 180-hp, four-cylinder airplane engine powers a propeller, and the blimp is steered by an inflated rudder. The cigar-shaped nylon envelope is 175 feet long and weighs 4,000 lbs when fully inflated. The first hot-air non-rigid dirigible, a 120 foot blimp, was manufactured in 1975 by Raven, Inc.

Latest Advisory Circulars on Aircraft, Airport Maintenance

Airmen who are interested in specifications governing their airplanes' equipment, or who would like to know where to go for approved mechanic training and certification, or where to get repairs done by the nearest certificated shop, may avail themselves of some of FAA's latest free advisory circulars.

AC 20-110, "Index of Aviation Technical Standard Orders," lists current and proposed FAA specifications for all materials, parts, equipment, and appliances used on civil aircraft. Since not all equipment has to be built to these specifications, this index could help pilots select the right equipment for a given operation.

All FAA-certified mechanic schools as of March 1, 1980, are listed in AC 147-2U, "Directory of FAA Certificated Maintenance Schools." This list specifies the type of training given in each school and the address. Some, but not all, of these schools have FAA-designated mechanic examiners to certify their candidates. See AC 183-32A, "FAA designated Maintenance Examiners Directory." A state-by-state listing (including type of repair) of aviation repair shops can be found in AC 140-7A, "FAA Certificated Maintenance Agencies Directory."

Also among the new advisory circulars is "Specifications for Obstruction Lighting Equipment," AC 150/5345-43C, which lists requirements for lighting airway obstructions en route and at airports. Pilots will find this useful for determining what kind of lighting can be expected on obstructions at or near unfamiliar airports, and airport operators can learn what type off lighting is required for any obstructions near their airports.

Write for these publications to DOT Publications Section, M-443.1, Washington, DC 20590. Request each by name and AC number.

Aviation Doctors Needed

Doctors interested in a career in aviation medicine, either in administrative work or aeromedical research, are needed by the Federal Air Surgeon's Office. For details on qualifications for these positions or other information, contact DOT/FAA, Federal Air Surgeon, AAM-610, 800 Independence Ave., S.W., Washington, DC, 20591.

Return to Large N-numbers Proposed for Most Aircraft

Three years ago sport aviation buffs and hobbyists got FAA to reduce the size of registration number for aircraft with a maximum speed of 180 kts or less from 12 inches to 3 so that the numbers would fit in with personal color and design schemes. Since then, FAA has had trouble enforcing certain regulations for lack of ability to read the smaller numbers at a distance. Drug smugglers as well have profitted from this difficulty in identification by pursuit aircraft, and some tower and ground controllers have had problems in identifying aircraft on large airports.

Consequently, FAA has proposed returning to the 12-inch letters and numbers for new airplanes and for older ones when they are repainted or the numbers refurbished or changed. (Gliders, certain experimental aircraft, and home builts would be exempt from the rule.)

Comments on the proposed rule change should be sent as soon as possible to FAA Office of Chief Counsel, Rules Docket, AGC-204, Docket 20404, 800 Independence Ave., S.W., Washington, DC, 20591.

Meteorologists Join ATC Centers

Pilots can look forward to more eficient weather avoidance for IFR flight planning, thanks to a closer tie established with the Weather Service and FAA. As of October 1, 1980, all 20 Air Route Traffic Control Centers in the continental U.S. will have National Weather Service Meteorologists on continuous duty to provide Center controllers with satellite weather data that may affect traffic routing.

The professional meteorologists will use satellite pictures and weather radar to determine intensity of storm cells and to predict where weather systems will move, so that center controllers can adjust IFR traffic flow in the area accordingly, well ahead of peak traffic periods. VFR traffic will also benefit, as the Center-based meteorologists will update weather information for pilot advisories to control towers, flight service stations, and the Enroute Flight Advisory System (Flight Watch).

Aviation Growth in the 80's

Aviation enthusiasts seeking a glimpse of the industry's future are invited to attend the sixth annual Aviation Forecast Conference October 21, 1980. The conference, in the Capitol Hilton in Washington, DC, will feature speeches by FAA Administrator Langhorne Bond and CAB member George Dalley, panel discussions on projected aviation growth rates, and the release of the publication, "Aviation Forecast—Fiscal Years 1981–1992."

Cost of the conference, including luncheon, is $20.00. Registration information may be obtained from Gene Mercer, AVP-120, Office of Aviation Policy, 800 Independence Ave., S.W., Washington, DC, 20591. If you are unable to attend but would like a copy of the publication, contact Mr. Mercer at the above address.

• BFR and High Performance

Most of my flying time has been logged in so-called high performance airplanes, beginning with the PT–17 and WWII bombers. Currently, I fly Cherokee *Arrows* and *Mooneys*, and each of my Biennial Flight Reviews have been taken in one or the other.

At a recent flight safety lecture we were told that our logbooks must be endorsed under FAR 61.31 for us to be found competent to fly high performance aircraft. If this is true, why didn't the BFR instructor also include an endorsement? Without this endorsement, am I in violation of FARs? If so, possibly there are many pilots that also believe the BFR in an aircraft ensures compliance with all requirements for all aircraft.

Raphael J. Janer
New York, NY

You are not required to have a flight instructor endorse your logbook for high performance aircraft if flight time in such aircraft had been acquired before November 1, 1973.

• Discouraged Pilot

Thanks for the information about the revision to FAR Part 135 ("News," March/April 1980). I had had thoughts of trying to make a living as a commuter pilot of a single-pilot aircraft. The cost of 100 hours of time before I could gain my first revenue dollars is enough to stop me. I won't be part of any accident under this rule since I won't be flying.

Thomas Stinson
Chula Vista, CA

The rule addition, FAR 1351.105, requires more experience in make and model for pilots-in-command of one-man crews of commuter aircraft. The change was prompted by a significant increase in commuter accidents. Statistics indicated insufficient experience was a factor.

• In Praise of Voltmeters

Your article "In The Dark" (May/June 1980) strikes a responsive chord. The electrical battery-with-generator systems are generally one of the hardest worked systems in any aircraft—especially as more and more demands are made on it with additions of more avionics.

One important additional meter that really ought to be standard in all aircraft is the *voltmeter*. This meter indicates battery condition even *before* an engine is cranked. It indicates the drop as the engine is cranked, and when it is fired up, it indicates the voltage being fed to the battery. Nothing is more satisfying than to see the needle steady in the green no matter how many switches are turned on.

Loadmeters are valuable, but they must be coupled with a voltmeter for more accurate indications of the health of the electrical system.

I. Groupp
Venice, CA

Many of the newer aircraft now have voltmeters, or over- and under-voltage lights, with an ammeter.

• Flexible Flash

Compliments on "In The Dark," your May/June warning about electrical failure. My prestart checklist includes a special flashlight that fits in my breast pocket; its flexible neck points where I need light, hands off. I thought I'd pass it on.

Sander Schimmelpenninck
Oakville, Ont., Canada

Sounds like a winner.

• Surface or Airborne?

FAR 91.10 states "no person may operate an aircraft *other than for the purpose of air navigation*, on any part of the surface of an airport used by aircraft for air commerce, in a careless or reckless manner . . ." The phrase "other than for the purpose of air navigation" seems to justify careless operation at any other time.

Glenn R. Johnson
Grand Junction, CO

FAR 91.9 states that no person may operate an aircraft in a careless or reckless manner and pertains to any operation for the purpose of flight, including taxiing to the runway for takeoff. FAR 91.10 refers only to surface operations not for the purpose of flight, such as maintenance, e.g., taxiing to the repair shop.

• Instrument Instruction

Instrument instructors holding only a flight instructor, single-engine certificate have been giving instrument instruction in multi-engine aircraft for a long time. The only requirement was that they hold a multi-engine rating and meet the currency requirements. There is some question in the San Juan area now whether according to new Part 61 this can still be done. I would appreciate a correct interpretation.

Frank Ramirez
San Juan, Puerto Rico

A flight instructor with ASEL and instrument ratings on his instructor certificate need not be multi-engine rated to give instrument instruction in a multi-engine airplane if the person receiving the instruction is so rated and is current. Otherwise, the instructor must have an AMEL rating that is current on his pilot certificate.

• Instrument Time and Day Time

I have a question concerning the proper logging of flight time according to FAR 61.51(b)(3), "Conditions of Flight." If I make a two-hour IFR daytime flight, one hour only in clouds with the other in clear weather, I know I can log only one hour of actual instrument, but how is the daytime logged? One hour or two?

Paul W. Kolody
Export, PA

You flew two hours in daytime, so log two hours in the "Day" column of your logbook. Only one of those hours was in instrument conditions, so log only one hour in the "Actual Instrument" column.

• Student In-Command

Can a student pilot log his solo time as pilot-in-command time in the hopes of applying the PIC time to a later certificate, such as commercial?

F. K. Carter
Greensboro, NC

Affirmative. FAA's General Counsel has interpreted FAR 61.51(c) to allow the logging of student pilot solo time as PIC time because the student is the sole occupant of the aircraft.

• Allow Us To Rephrase

"The Weather Game" (July/August 1980) was a very interesting and entertaining article; however, I came across something that must be a typographical error. The article states that "NAVAIDS *with* voice capability are identified on sectional charts by a line under the frequency." I believe the line means *without* voice.

Also, it would have been nice at the end of the article if you had said the game is not finished until the flight plan is closed, because unless you close it, someone is going to track you all the way back to square one.

Paul Levine
Caldwell, CA

You are right on the mark. "With" instead of "Without" was a typesetting error.

FAA GENERAL AVIATION NEWS welcomes comments from our readers. No anonymous letters will be used, but names will be withheld on request. Address: FAA GENERAL AVIATION NEWS, AFO-807, Washington, D.C. 20591.

• Don't Fence Me Out!

I take objection to portions of the article "TCA and the VFR Pilot" (May/June 1980). The article states at one point that "normally the pilot . . . will be given vectors for flying through the (TCA) area." More times than not when I have requested clearance through a TCA, although fully equipped, I have been denied it, IFR or VFR resulting in long roundabout diversions that cost time and fuel. Atlanta and Los Angeles are noted for this.

I can understand denying passageway to transiting traffic in times of heavy arrivals and departures, but I have been refused even in off-peak hours, early in the morning or late at night.

Furthermore, the article states, "Delays and detours can be minimized if the pilot contacts approach control well before reaching . . . the TCA." My experience has been that this does not help *at all* in obtaining clearance through a TCA.

TCA's are a valid topic for *FAA General Aviation News*, but this is a magazine known for giving straight answers. Peak hours from dawn to dusk? Ridiculous!

Name Withheld

In point of fact many TCA's—Los Angeles, O'Hare, Atlanta, New York, to name a few—do handle "peak" traffic all day long and far into the night. Air traffic control understandably gives first consideration to aircraft requiring the use of airports within the TCA, and at times the area would become saturated if the tower attempted to handle more traffic.

Ability to accommodate transiting aircraft varies from one TCA to another, depending not only on traffic volume but also on terrain and route configuration. For example, Washington National Airport closes to air carrier traffic at 10:30 p. m., and consequently, a great deal of traffic is sometimes handled between 6:00 p.m. and closing time. However, IFR or VFR traffic and even some dual training flights are permitted to transit during these busy hours if the route of flight is well away from National's approach and departure paths over the Potomac River.

One phrase in our May/June article on TCA's could be misleading. We did not intend to imply that aircraft could transit a TCA at any time, but only when airport traffic density allows. However, if controllers in a TCA continually refuse to allow IFR or VFR fully equipped traffic to transit, for no ascertainable reason, you may seek help from the Chief, Terminal Operations and Procedures Branch, AAT–320, Federal Aviation Administration, Washington, DC, 20591.

INSTRUMENT CORNER

• I'll Show Him!

On more than one occasion, I have been assigned a Localizer Back Course approach at an airport also having a full ILS when the ceiling was well below Localizer minimums but above ILS minimums. Should the pilot immediately reject the assignment or execute it to show ATC that a landing is not possible by that route?

Cyril Toker
Potomac, MD

If the localizer BC approach is in use—at an airport which also has an ILS approach—when the weather is below BC minimums, it may mean the ILS is unusable for one reason or another. The only clearance available would be the BC, regardless of the weather, and the pilot must decide whether or not to continue. At no time continue a questionable approach without first requesting clarification of any clearance that seems unsafe.

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Smooth sailing on the other side of the mountain

Is something pilots had better not count on